

Aatmaj Amol Salunke

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Available: **May 2025 – Dec 2025**

EDUCATION

Northeastern University, Boston, MA

Sept 2024 - Dec 2026

Master of Science in Artificial Intelligence (Khoury College of Computer Sciences)

CGPA: 3.67/4.0

Courses: Reinforcement Learning and Sequential Decision Making, Foundations of Artificial Intelligence, Algorithms, NLP

Manipal University Jaipur, India

Oct 2020 – May 2024

Bachelor of Technology in Computer Science and Engineering

CGPA: 8.92/10

Courses: Natural Language Processing, Deep Learning, Design and Analysis of Algorithms, Database Management Systems, Computer Vision

EXPERIENCE

Scientific Researcher | ISRO - Indian Space Research Organization (SAC) | Ahmedabad, Gujarat, India

Jan 2024 – May 2024

- Conducted in-depth research in Signal and Image Processing, developing robust Land Surface Temperature (LST) and Emissivity models using satellite imagery from **seven** global regions under varied weather conditions.
- Leveraged GANs, particularly **Pix2Pix**, for automated atmospheric predictions, achieving high performance with a MAE of **0.00483** and SSIM of **0.9453** for the **LST** model, and a MAE of **0.0136** and SSIM of **0.9171** for the **Emissivity** model on unseen data.

Machine Learning Intern | WictroniX | Vadodara, Gujarat, India

June 2023 – Aug 2023

- Contributed to a **Government of Gujarat** project by analyzing traffic patterns through precise annotation of over **2,000** drone images from **100** key junctions in **Surat**, classifying vehicles into **seven** categories: Bus, Cars, LCV, M2W, MAV, Rickshaw, and Truck.
- Provided insights for transportation infrastructure and forwarded the annotated data—split in a **70-20-10** ratio—to the machine learning development team for model training.

Artificial Intelligence Mentee | IBM | Jaipur, Rajasthan, India

June 2023 – Jul 2023

- Developed a Mental Fitness Tracker using machine learning that analyses **8** mental health indicators across countries, achieving **99.6%** prediction accuracy through **Random Forest Regression** to provide personalized mental health insights.
- Implemented comprehensive data preprocessing techniques using **Python** to analyze **6,840** mental health records across multiple countries, comparing **4** different ML models and techniques to identify optimal prediction performance for mental fitness assessment.

SKILLS

Languages:	Python, C++, Java, C, C#, HTML/CSS, JavaScript, MySQL, React, Next.js
Libraries/Frameworks:	TensorFlow, PyTorch, Transformers, Sklearn, Huggingface, NLTK, Gym, Django, LangChain, MS Azure
ML and DL:	CNNs and RNNs, Computer Vision, Natural Language Processing, Reinforcement Learning
Data Science:	Exploratory Data Analysis, Data Preprocessing, Data Augmentation, Feature Engineering, Statistics
Backend/API:	Django, Flask, Pinecone, SQL, MongoDB, Unity (RL), Web scraping, BeautifulSoup, REST APIs, LLMs, FAISS

ACADEMIC PROJECTS

AI-Powered Financial Document Q&A Chatbot Using RAG & LLMs

Information Retrieval, LLMs, LangChain

- Engineered** an AI-driven **RAG-based financial chatbot**, leveraging **FinBERT**, **FAISS**, and **LangChain** to retrieve and generate insights from **1,000+** financial documents, including **SEC filings** and **earnings reports**, achieving **85% higher retrieval accuracy** and reducing query response time by **37%** through implementation of **semantic** and **keyword** search with **Maximum Marginal Relevance (MMR)**.
- Leveraged **3 embedding models** and **2 LLM providers (Mistral, Gemini)** to process multi-page financial documents **40%** faster than traditional methods, enabling extraction of insights across **15+** specialized financial document sections.

Airbnb Property Search Bot

NLP Bot, LLMs, Information Retrieval

- Developed an **AI-powered Airbnb property search bot** integrating **NLP** and **hybrid retrieval** (dense embeddings + BM25) with Pinecone, improving search relevance by **40%** and reducing query processing time by **30%**.
- Implemented a Generative AI based query refinement system using **Google's Gemini model**, enhancing natural language search accuracy by **35%** and enabling real-time property recommendations within a **Streamlit** interface.

SmartCart - AI-driven grocery shopping made effortless, affordable, and personalized

LLM, Django REST, React.js & Next.js

- Developed an AI-powered grocery delivery web app, **SmartCart**, during the **Innovate 2025 Hackathon**, leveraging **LLMs** for automated ingredient list generation from dish names and real-time price comparison, reducing manual shopping effort by **50-60%**.
- Implemented an optimization algorithm for vendor selection, integrating **LLM-driven deal discovery** to find the best possible prices, lowering total cart costs by **10-12%**, while enhancing customer **satisfaction** through **dietary preference** and **allergy** considerations.

PUBLICATIONS

- [Enhancing Contextual Understanding in NLP: A Subword Tokenization Approach with ELMo and BERT](#)
- [OTPLM: An Ontology-Driven Approach for Tagging Plants of Medicinal and Ornamental Value using Hybrid Semantics and Strategic Learning Models](#)
- [DRHA: Document Recommendation for Horticulture and Agro-Based Farming](#)